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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,711	04/24/2001	Christian Voye	FA1000 US NA	4824

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E I DU PONT DE NEMOURS AND COMPANY  
LEGAL PATENT RECORDS CENTER  
BARLEY MILL PLAZA 25/1128  
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WILMINGTON, DE 19805

EXAMINER

SEALEY, LANCE W

ART UNIT	PAPER NUMBER
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2671

DATE MAILED: 04/25/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/840,711

Applicant(s)

VOYE ET AL.

Examiner

Lance W. Sealey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 April 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-13 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Allowable Subject Matter***

1. Claims 5-6 are objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
2. The prior art does not anticipate or suggest, in a process for the generation of a computer image of a coated, three-dimensional object comprising the step of applying at least a relevant coating layer on at least two test panels coated in a horizontal orientation and two test panels coated in a vertical orientation, using the same sets of coating parameters used to coat the panels in the horizontal orientation as are used to coat the panels in the vertical orientation, and storing the relevant optical data with assignment of the relevant orientation prevailing while the test panels are being coated, and the relevant optical data are selected accordingly when assigned to each individual polygonal area (claim 5). Claim 6 is allowable because it depends on claim 5.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 1-3 and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable by Numata et al ("Numata," U.S. Pat. No. 6,539,325) in view of Snyder et al. ("Snyder," U.S. Pat. No. 5,907,495), the BYK-Gardner wave-scan DOI product ("BYK-Gardner"), Cooper (U.S. Pat. No. 6,118,456) and Sasaki (U.S. Pat. No. 5,577,960).

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5. Numata, in disclosing a color matching apparatus for automotive repair paints, also discloses, with respect to claim 1(a), a process for the generation of a computer image of a coated, three-dimensional object comprising the steps of applying at least different relevant coating layers under the influence of a set of coating parameters (col.9, ll.15-39).

6. However, Numata does not disclose, also with respect to claim 1(a), applying the different coating layers on at least two test panels. This element is disclosed by the Snyder method of formulating paint through color space modeling at col.8, ll.57-63.

7. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to combine Numata with Snyder. Such a combination of these two references would result in customer satisfaction as a result of producing a desirable automobile paint color (Snyder, col.1, ll.39-56).

8. Concerning claim 1(b), neither Numata nor Snyder disclose taking a plurality of measurements of at least one optical surface property as a function of the set of coating parameters selected on application of the relevant coating layer on each panel. However, BYK-Gardner discloses this element in its first paragraph—"The objective eye for a brilliant finish"—and the last bullet under "Total Appearance..." labeled "For solid and metallic coatings".

9. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to combine the Numata-Snyder process with the capabilities of the BYK-Gardner product. Such a combination of these references would result in determining the quality of a paint finish, which is helpful for facilitating customer satisfaction and marketing efforts with respect to automobiles (BYK-Gardner, first paragraph).

10. Regarding claim 1(c), BYK-Gardner also discloses storing the optical data in a datafile with assignment of the relevant set of coating parameters selected on application of the relevant coating parameter on each panel at the last bullet under "...in one handy instrument"—"Auto chart software for professional analysis,

documentation and data management".

11. However, neither Numata, Snyder nor BYK-Gardner disclose the subject matter of claim 1(d), facetting the visible surface(s) of a three-dimensional object by computer into a sufficient number of flat polygonal areas each being sufficiently small for the sufficiently accurate description of the surface topography. This element is disclosed by the Cooper method for organization of objects within a 3-D virtual environment at col.1, ll.13-34.

12. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to combine the Numata-Snyder-BYK Gardner process with the virtual reality capability of Cooper. Such a combination of these references would facilitate quality control by rendering a surface for which the topography would be accurately simulated (Cooper, col.1, ll.13-34).

13. However, neither Numata, Snyder, BYK-Gardner nor Cooper disclose the elements described in (e) or (f) of claim 1: assigning the relevant set of coating parameters and associated optical data in each case to each individual polygonal area by computer, and assembling the polygonal areas into a computer image of the three-dimensional object. Both of these elements are disclosed by the Sasaki image synthesizing system; (e) is disclosed in the fourth sentence of the Abstract (coating parameters and optical surface properties are texture), and (f) is disclosed in the last sentence of the Abstract.

14. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to combine the Numata-Snyder-BYK Gardner-Cooper apparatus with the textural/visual capabilities of Sasaki. Such a combination of these references would reduce the burden on the hardware when displaying the computer image (Sasaki, col.2, ll.40-44).

15. The other claims in this rejection will now be considered. With respect to claim 2, Numata discloses a single-layer top coating consisting of the relevant coating layer at col.9, ll.15-20.

16. Concerning claim 3, Snyder discloses the relevant coating layer participating as one layer in a multi-layer coating in col.3, l.62 to col.4, l.1.

17. Regarding claims 7 and 8, the applicants admit that the BYK-Gardner product discloses these elements on p.5, ll.15-34 of the specification.

18. With respect to claim 9, BYK-Gardner discloses the computer image as a representation selected from the group consisting of i) representation of an individual optical surface property and ii) representation of a combination of at least two optical surface properties; (i) is disclosed in the second bullet of the "Total Appearance" section of the BYK-Gardner reference.

19. Concerning claim 10, Sasaki discloses a) a visually perceptible, realistic, three-dimensional representation of a computer image at the last sentence of the Abstract.

20. Regarding claim 11, BYK-Gardner discloses the computer image existing only as a data set at the last bullet under "...in one handy instrument"—"Auto chart software for professional analysis, documentation and data management".

21. With respect to claim 12, Sasaki discloses an interactive real-time representation of a computer image in the first and last sentences of the Abstract.

22. Finally concerning claim 13, Snyder discloses the three-dimensional object as being selected from the group consisting of motor vehicle bodies and body parts in col.1, ll.10-11, where the reader learns that the Snyder invention has its background in the automotive industry.

23. Accordingly, in view of the foregoing, claims 1-3 and 7-13 are rendered unpatentable under 35 U.S.C. 103(a) by Numata, Snyder, BYK-Gardner, Cooper and Sasaki.

24. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable by Numata in view of Snyder, BYK-Gardner, Cooper and Sasaki and further in view of Rupieper et al. ("Rupieper," U.S. Pat. No. 5,991,042).

25. Neither Numata, Snyder, BYK-Gardner, Cooper or Sasaki disclose the two test panels assuming a position selected from the group consisting of a horizontal orientation and a vertical orientation. However, this element is disclosed by Rupieper at col.2, l.60, to col.3, l.5.

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26. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to combine the Numata-Snyder-BYK Gardner-Cooper-Sasaki apparatus with the teaching of Rupieper. Such a combination of these references would save time by drying the test panels more quickly (Rupieper, col.3, ll.1-5).

27. Accordingly, in view of the foregoing, claim 4 is rendered unpatentable under 35 U.S.C. 103(a) by Numata, Snyder, BYK-Gardner, Cooper, Sasaki and Rupieper.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the Office should be directed to the examiner, Lance Sealey, whose telephone number is (703) 305-0026. He can be reached from 7:00 am-3:30 pm Monday-Friday EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (703) 305-9798. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA,  
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office at (703) 306-0377.

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Respectfully submitted,

*Lance W. Sealey*

Lance W. Sealey, examiner